

LINEAR DIFFERENTIAL OPERATORS ON SPLINE SPACES AND SPLINE VECTOR FIELDS

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We consider the application of standard differentiation operators to polynomial spline spaces and spline vector fields defined on triangulations. In particular, we explore the use of Bernstein Bézier techniques for answering questions such as: what are the images or the kernels, and their dimensions, of partial derivative, gradient, divergence, curl, or Laplace, operators. We also describe applications of our results to finite element methods.

Joint work with Peter Alfeld (University of Utah).